Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
Southeast Regional Office • 20 Riverside Drive, Lakeville MA 02347 • 508-946-2700

DEVAL L. PATRICK
Governor

RICHARD K. SULLIVAN JR.
Secretary

KENNETH L. KIMMELL
Commissioner

July 19, 2013

Mr. Mark Angus, President
Trelleborg Offshore Boston
24 Teed Drive
Randolph, MA 02368

RE: Randolph
Transmittal No.: X255290
Application No.: SE-13-016
Class: SM-50
FMF No.: 500267
AIR QUALITY PLAN APPROVAL

Dear Mr. Angus:

The Massachusetts Department of Environmental Protection ("MassDEP"), Bureau of Waste Prevention, has reviewed your Non-major Comprehensive Plan Application ("Application") listed above. This Application concerns the proposed construction and operation of a buoyancy material manufacturing facility located at 24 Teed Drive, Randolph, Massachusetts ("Facility"). The Application bears the seal and signature of Christopher Walton, Massachusetts Registered Professional Engineer number 39510.

This Application was submitted in accordance with 310 CMR 7.02 Plan Approval and Emission Limitations as contained in 310 CMR 7.00 "Air Pollution Control," regulations adopted by MassDEP pursuant to the authority granted by Massachusetts General Laws, Chapter 111, Section 142 A-J, Chapter 21C, Section 4 and 6, and Chapter 21E, Section 6. MassDEP's review of your Application has been limited to air pollution control regulation compliance and does not relieve you of the obligation to comply with any other regulatory requirements.

MassDEP has determined that the Application is administratively and technically complete and that the Application is in conformance with the Air Pollution Control regulations and current air pollution control engineering practice, and hereby grants this **Plan Approval** for said Application, as submitted, subject to the conditions listed below.

Please review the entire Plan Approval, as it stipulates the conditions with which the Facility owner/operator ("Permittee") must comply in order for the Facility to be operated in compliance with this Plan Approval.

1. DESCRIPTION OF FACILITY AND APPLICATION

The Permittee has asked to relocate equipment contained in MassDEP Conditional Approval No. SE-11-033 dated March 6, 2011, now identified as Emission Units (EU) Nos. 1-10. The relocated equipment will join an existing microballoon production operation (EU11), in the Permittee's Randolph facility, which previously was exempt from air plan approval.

Emissions from the facility include Volatile Organic Compounds (VOCs), Hazardous Air Pollutants (HAPs), and Particulate Matter (PM).

Facility operations are as follows:

- Expanded Polystyrene Ball Production – Styrene is expanded into balls in a steam heated expander twice, after which the balls are powder coated in a tumbler. The tumbler is vented to a Donaldson Torit Model 2DF4 baghouse. This dust collector also collects exhaust from the saw room.
- TG Block Production – PMS or TBS is premixed prior to blending with micro-balloons. The blended mixture is poured into molds. Material from the DIT mixer is sent directly to ovens for curing, while that from the Hobart mixer is sent to a vacuum chamber for removal of entrained air prior to curing. After curing, the molds are sent to the cutting room. The cut product is placed in a post cure oven.
- Eccolite Block Production – CBT-100 resin is mixed, poured into molds then placed in a curing oven. The cured product is sent to the saw room.
- Extruded Polypropylene Tape – Product is heated, extruded, than cooled in a water bath.
- Process Cleaning Operations – Isopropyl Alcohol and other cleaners are used to clean molds and equipment.
- Tooling Board Production – Product is mixed, poured into molds, put into a vacuum tank then cured. The cured boards are sent to a CNC machine, which is vented to an internally exhausted dust collector. No VOC or HAP emissions are associated with this operation.
- General Syntactic / Syntac / EL / DS Block Production – Product is mixed, poured in molds, and cured. EL and DS are additionally placed in a post cure oven, and hydrotested. No VOC or HAP emissions are associated with this operation.
- Saw Room Operations – Cured material from General Syntactic, Syntac, EL, DS, Eccolite, and TG processes are cut to their final product dimensions. Exhaust from the saw room is vented to a dust collector, which is shared with the Expanded Polystyrene Ball tumbler.
- Paint Spray Booth – The paint spray booth will be installed and operated consistent with MassDEP Regulation 310 CMR 7.03(16) "Paint Spray Booths," except the VOC content of the paints, which are as established herein.

- Microballoon Production – Silicate is processed through a spray dryer after which it is heated and expanded in furnaces. Cyclones are used to separate the product at each step, and the waste particulate matter is discharged to four (4) baghouses.

2. EMISSION UNIT (EU) IDENTIFICATION

Each Emission Unit (EU) identified in Table 1 is subject to and regulated by this Plan Approval:

Table 1

EU#	Description	Design Capacity	Pollution Control Device (PCD)
1	Expanded Polystyrene Balls	30 batches per week 110 pounds per expander batch 1870 pounds per tumbler batch	Donaldson Torit Model 2DF4 baghouse [1]
2	TG Block Production	143 blocks per day 0.5 ft^3 per block	
3	Eccolite Block Production	12 batches per week 5 ft^3 per batch	
4	Extruded Polypropylene Tape Production	950 pounds per hour	
5	Process Cleaning Operations	Undetermined	
6	Tooling Board Production	Undetermined	
7	General Syntactic / Syntac / EL / DS Block Production	Undetermined	
8	Saw Room Operations	196 blocks per day	Donaldson Torit Model 2DF4 baghouse [1]
9	Paint Booth	Undetermined	Paper particulate filters
10	Paint Booth Cleaning Operations	Undetermined	
11	Microballoon Production	21 batches per week 1443 pounds per batch	Quantity: 4 Aeropulse Model PR-340-8-HS-Y Baghouses

Table 1 Key:
EU# = Emission Unit Number
PCD = Pollution Control Device
ft^3 = cubic foot

Note:
1. EU#1 and EU#8 share the same PCD

3. APPLICABLE REQUIREMENTS

A. OPERATIONAL, PRODUCTION and EMISSION LIMITS

The Permittee is subject to, and shall not exceed the Operational, Production, and Emission Limits as contained in Table 2:

Table 2

EU#	Operational / Production Limit	Air Contam-inant	Emission Limit
1 EP	1. 7.2 tons Styropor per month. 2. 85.8 tons Styropor per year. 3. 122 tons coating material per month. 4. 1,459 tons coating material per year.	VOC	8.5 % VOC 0.6 TPM 7.3 TPY
		HAP (single) HAPs (total)	0.5 % HAPs 0.03 TPM 0.4 TPY
		PM / PM_{10} / $PM_{2.5}$	99.9% Control Efficiency 0.02 TPY
2 TG	5. 2,200 ft3 of blocks per month. 6. 26,000 ft3 of blocks per year.	VOC	$\leq$ 2E-04 lb VOC / ft3 block 0.01 TPY
3 ECO	7. 260 ft3 of blocks per month. 8. 3120 ft3 of blocks per year.	VOC	1% VOC 0.004 TPM 0.05 TPY
4 TAPE	9. 347 tons tape per month. 10. 4,160 tons tape per year.	VOC	0.24 lb VOC / ton tape 0.04 TPM 0.5 TPY
		HAP (single) HAPs (total)	0.068 lb HAPs / ton tape 0.01 TPM 0.14 TPY
5 CLEAN	11. 130 gallons solvent per month. 12. 645 gallons solvent per year.	VOC	9.01 lb VOC / gallon 0.6 TPM 2.9 TPY
		HAP (single) HAPs (total)	5.80 lb HAPs/ gallon 0.2 TPM 0.9 TPY
6 TOOL	None	None	None
7 SYNTAC	None	None	None
8 SAW	13. 6,076 blocks per month. 14. 71,540 blocks per year.	PM / PM_{10} / $PM_{2.5}$	99% Control Efficiency 0.03 TPM 0.3 TPY

Table 2			
EU#	**Operational / Production Limit**	**Air Contam-inant**	**Emission Limit**
9 PAINT	15. 200 gal per month. 16. 1,000 gal per year. These limits are the combined total for paint and primer. Paint booth installed and operated consistent with 310 CMR 7.03(16).	PM / PM_{10} / $PM_{2.5}$	97% Control Efficiency 0.02 TPM 0.1 TPY
		VOC	Primer $\leq$ 5.98 lb VOC/gal solids Paint $\leq$ 13.90 lb VOC/gal solids 0.5 TPM 2.4 TPY
		HAP (single) HAPs (total)	Primer $\leq$ 5.98 lb HAPs/gal solids Paint $\leq$ 13.90 lb HAPs/gal solids 0.5 TPM 2.4 TPY
10 PAINT CLEAN	17. 40 gal per month. 18. 200 gal per year.	VOC	7.81 lb VOC / gallon 0.2 TPM 0.8 TPY
11 MB1 MB2	19. 219 tons solids per month. 20. 1,093 tons solids per year.	PM / PM_{10} / $PM_{2.5}$	99.75% Control Efficiency 0.01 TPM 0.15 TPY
All	None	Opacity	0%
Facility-wide		VOC	1.9 TPM
			14.0 TPY
		HAP (single) HAPs (total)	0.8 TPM
			3.8 TPY
		PM / PM_{10} / $PM_{2.5}$	0.1 TPM
			0.6 TPY

Table 2 Key:
EU# = Emission Unit Number
$\leq$ = less than or equal to
gal = gallon
lb = pound
PM = Total Particulate Matter
PM_{10} = Particulate Matter less than or equal to 10 microns in diameter
$PM_{2.5}$ = Particulate Matter less than or equal to 2.5 microns in diameter
VOC = Volatile Organic Compounds
HAP (single) = maximum single Hazardous Air Pollutant
HAPs (total) = total Hazardous Air Pollutants.
TPM = tons per month
TPY = tons per consecutive12-month period

B. COMPLIANCE DEMONSTRATION

The Permittee is subject to, and shall comply with, the monitoring, testing, record keeping, and reporting requirements as contained in Tables 3, 4, and 5:

Table 3

EU#	Monitoring and Testing Requirements
Facility-wide	1. The Permittee shall monitor all operations to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.
	2. If and when MassDEP requires it, the Permittee shall conduct emission testing in accordance with USEPA Reference Test Methods and regulation 310 CMR 7.13

Table 3 Key:
EU# = Emission Unit Number

Table 4

EU#	Record Keeping Requirements
1 thru 11	1. The Permittee shall maintain monthly and annual logs of raw materials used. These logs shall be kept in a complete and accurate fashion at all times and shall be available for MassDEP inspections. The Permittee may reconcile VOCs and HAPs contained in any hazardous waste shipped during the month when determining monthly emissions. The Permittee shall maintain beginning and end of year inventory records, hazardous waste disposal records, and purchase records for VOC and HAP containing material, such that MassDEP may check these for consistency with plant logs. Such records shall verify the VOC and HAP content, and quantity present, in the waste shipped if reconciling monthly emissions.
Facility-wide	2. The Permittee shall maintain adequate records on-site to demonstrate compliance with all operational, production, and emission limits contained in Table 2 above. Records shall also include the actual emissions of air contaminant(s) emitted for each calendar month and for each consecutive twelve month period (current month plus prior eleven months). These records shall be compiled no later than the 15th day following each month. An electronic version of the MassDEP approved record keeping form, in Microsoft Excel format, can be downloaded at http://www.mass.gov/dep/air/approvals/aqforms.htm#report . These records shall include: • identity, formulation (as determined by the manufacturer's formulation data) and quantity for each VOC and HAP containing material used; • total VOC and HAP content of each material cited in Table 2, above.
	3. The Permittee shall maintain records documenting compliance with the provisions of this Plan.

Table 4	
EU#	**Record Keeping Requirements**
	4. The Permittee shall maintain records of monitoring and testing as required by Table 3.
	5. The Permittee shall maintain a copy of this Plan Approval, underlying Application and the most up-to-date SOMP for the EU(s) and PCD(s) approved herein on-site.
	6. The Permittee shall maintain a record of routine maintenance activities performed on the approved EU(s), PCD(s) and monitoring equipment. The records shall include, at a minimum, the type or a description of the maintenance performed and the date and time the work was completed.
	7. The Permittee shall maintain a record of all malfunctions affecting air contaminant emission rates on the approved EU(s), PCD(s), and monitoring equipment. At a minimum, the records shall include: date and time the malfunction occurred; description of the malfunction; corrective actions taken; the date and time corrective actions were initiated and completed; and the date and time emission rates and monitoring equipment returned to compliant operation.
	8. The Permittee shall maintain records to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.
	9. The Permittee shall maintain records required by this Plan Approval on-site for a minimum of five (5) years.
	10. The Permittee shall make records required by this Plan Approval available to MassDEP and USEPA personnel upon request.

Table 4 Key:
EU# = Emission Unit Number
PCD = Pollution Control Device
SOMP = Standard Operating and Maintenance Procedure
USEPA = United States Environmental Protection Agency
VOC = Volatile Organic Compound
HAP = Hazardous Air Pollutant

Table 5	
EU#	**Reporting Requirements**
Facility-wide	1. The Permittee shall submit to MassDEP all information required by this Plan Approval over the signature of a "Responsible Official" as defined in 310 CMR 7.00 and shall include the Certification statement as provided in 310 CMR 7.01(2)(c).

Table 5	
EU#	**Reporting Requirements**
	2. The Permittee shall notify the Southeast Regional Office of MassDEP, BWP Compliance & Enforcement (C/E) Chief by telephone (508) 946-2878, email sero.air@state.ma.us or fax (508) 946-2865 or (508) 947-6557 as soon as possible, but no later than one (1) business day after discovery of an exceedance(s) of Table 2 requirements. A written report shall be submitted to C/E Chief at MassDEP within three (3) business days thereafter and shall include: identification of exceedance(s), duration of exceedance(s), reason for the exceedance(s), corrective actions taken, and action plan to prevent future exceedance(s).
	3. The Permittee shall report every three years to MassDEP, in accordance with 310 CMR 7.12, all information as required by the Source Registration/Emission Statement Form. The Permittee shall note therein any minor changes (under 310 CMR 7.02(2)(e), 7.03, 7.26, etc.), which did not require Plan Approval.
	4. The Permittee shall provide a copy to MassDEP of any record required to be maintained by this Plan Approval within 30-days from MassDEP's request.
	5. The Permittee shall submit to MassDEP for approval a stack emission pretest protocol, at least 30 days prior to emission testing, for emission testing as defined in Table 3 Monitoring and Testing Requirements.
	6. The Permittee shall submit to MassDEP a final stack emission test results report, within 45 days after emission testing, for emission testing as defined in Table 3 Monitoring and Testing Requirements.

Table 5 Key:
EU# = Emission Unit Number

4. SPECIAL TERMS AND CONDITIONS

A. The Permittee is subject to, and shall comply with, with the Special Terms and Conditions as contained in Table 6:

Table 6	
EU#	**Special Terms and Conditions**
none	none

Table 6 Key:
EU# = Emission Unit Number

B. The Permittee shall install and use an exhaust stack, as required in Table 7, on each of the Emission Units that is consistent with good air pollution control engineering practice and that discharges so as to not cause or contribute to a condition of air pollution. Each exhaust stack shall be configured to discharge the gases vertically and shall not be equipped with any part or device that restricts the vertical exhaust flow of the emitted gases, including but not limited to rain protection devices known as "shanty caps" and "egg beaters."

C. The Permittee shall install and utilize exhaust stacks with the following parameters, as contained in Table 7, for the Emission Units that are regulated by this Plan Approval:

Table 7

EU#	Minimum Stack Height Above Ground (feet)	Stack Inside Exit Dimensions (feet)	Stack Gas Exit Velocity Range (feet per second)	Stack Gas Exit Temperature Range (^{o}F)
2	40	.75	4.5 – 70	130 – 120
4	40	.75	16.7 – 30	70 – 150
3,7	40	.75	4.5 – 70	130 – 350
3,7	40	.75	4.5 – 70	130 – 350
3,7	40	.75	4.5 – 70	130 – 350
8,1	40	.75	70 – 150	70 – 250
9	40	2	100 - 490	65 – 85
11	40	1	25 – 35	70 – 180
11	40	1	25 – 35	70 – 180
11	40	1	25 – 35	70 – 180
11	40	1	25 – 35	70 – 180

Table 7 Key:
EU# = Emission Unit Number
^{o}F = Degree Fahrenheit

5. GENERAL CONDITIONS

The Permittee is subject to, and shall comply with, the following general conditions:

A. Pursuant to 310 CMR 7.01, 7.02, 7.09 and 7.10, should any nuisance condition(s), including but not limited to smoke, dust, odor or noise, occur as the result of the operation of the Facility, then the Permittee shall immediately take appropriate steps including shutdown, if necessary, to abate said nuisance condition(s).

B. If asbestos remediation/removal will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that all removal/remediation of asbestos shall be done in accordance with 310 CMR 7.15 in its entirety and 310 CMR 4.00.

C. If construction or demolition of an industrial, commercial or institutional building will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that said construction or demolition shall be done in accordance with 310 CMR 7.09(2) and 310 CMR 4.00.

D. Pursuant to 310 CMR 7.01(2)(b) and 7.02(7)(b), the Permittee shall allow MassDEP and / or USEPA personnel access to the Facility, buildings, and all pertinent records for the purpose of making inspections and surveys, collecting samples, obtaining data, and reviewing records.

E. This Plan Approval does not negate the responsibility of the Permittee to comply with any other applicable Federal, State, or local regulations now or in the future.

F. Should there be any differences between the Application and this Plan Approval, the Plan Approval shall govern.

G. Pursuant to 310 CMR 7.02(3)(k), MassDEP may revoke this Plan Approval if the construction work is not commenced within two years from the date of issuance of this Plan Approval, or if the construction work is suspended for one year or more.

H. This Plan Approval may be suspended, modified, or revoked by MassDEP if MassDEP determines that any condition or part of this Plan Approval is being violated.

I. This Plan Approval may be modified or amended when in the opinion of MassDEP such is necessary or appropriate to clarify the Plan Approval conditions or after consideration of a written request by the Permittee to amend the Plan Approval conditions.

J. The Permittee shall conduct emission testing, if requested by MassDEP, in accordance with USEPA Reference Test Methods and regulation 310 CMR 7.13. If required, a pretest

protocol report shall be submitted to MassDEP at least 30 days prior to emission testing and the final test results report shall be submitted within 45 days after emission testing.

K. Pursuant to 310 CMR 7.01(3) and 7.02(3)(f), the Permittee shall comply with all conditions contained in this Plan Approval. Should there be any differences between provisions contained in the General Conditions and provisions contained elsewhere in the Plan Approval, the latter shall govern.

6. MASSACHUSETTS ENVIRONMENTAL POLICY ACT

MassDEP has determined that the filing of an Environmental Notification Form (ENF) with the Secretary of Energy & Environmental Affairs, for air quality control purposes, was not required prior to this action by MassDEP. Notwithstanding this determination, the Massachusetts Environmental Policy Act (MEPA) and 301 CMR 11.00, Section 11.04, provide certain "Fail-Safe Provisions," which allow the Secretary to require the filing of an ENF and/or an Environmental Impact Report (EIR) at a later time.

7. APPEAL PROCESS

This Plan Approval is an action of MassDEP. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date of issuance of this Plan Approval.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts, which are the grounds for the request, and the relief sought. Additionally, the request must state why the Plan Approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars ($100.00) must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

This request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

MassDEP may waive the adjudicatory hearing-filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

Enclosed is a stamped approved copy of the application submittal.

Should you have any questions concerning this Plan Approval, please contact Dan Kamieniecki by telephone at 508-946-2717, or in writing at the letterhead address.

Thomas Cushing
Permit Chief
Bureau of Waste Prevention

Enclosure

ecc: Randolph Board of Health/Dept of Health
Randolph Fire Department
MassDEP/Boston – Y. Tian
MassDEP/SERO – M. Pinaud, L. Black
Capaccio Environmental Engineering, Inc – L. Sheridan, M. Melvin